PSCA: PROSTATE STEM CELL ANTIGEN

This application is claiming the priority of provisional applications, U.S. Serial No. 08/814,279, filed March 10, 1997; U. S. Serial No. 60/071,141 filed January 12, 1998 and; U. S. Serial No. 60/074,675, filed February 13, 1998.

Throughout this application, various publications are referenced within parentheses. The disclosures of these publications are hereby incorporated by reference herein in their entireties.

BACKGROUND OF THE INVENTION

Prostate cancer is currently the most common type of cancer in American men and the second leading cause of cancer related death in this population. In its advanced stages, prostate cancer metastasizes preferentially to bone, where it forms osteoblastic lesions. After initial treatment with androgen ablation therapy, most metastatic prostate cancers become hormone-refractory and lethal. Current diagnostic and therapeutic modalities are limited by a lack of specificity and an inability to predict which patients are at risk of developing metastatic disease.

Most prostate cancers initially occur in the peripheral zone of the prostate gland, away from the urethra. Tumors within this zone may not produce any symptoms and, as a result, most men with early-stage prostate cancer will not present clinical symptoms of the disease until significant progression has occurred. Tumor progression into the transition zone of the prostate may lead to urethral obstruction, thus producing the first symptoms of the disease. However, these clinical symptoms are indistinguishable from the common non-malignant condition of benign prostatic hyperplasia (BPH).

One of the fundamental problems in the diagnosis and treatment of prostate cancer is the lack of a marker that can accurately detect early-stage, localized tumors. Although a number of markers have been identified and some, like PSA, are in widespread clinical use, the ideal prostate tumor marker has yet to be characterized. A similar problem is the lack of an effective prognostic marker for determining which cancers are indolent and which ones are or will be aggressive. PSA, for example, fails to discriminate accurately between indolent and aggressive cancers. In addition, there is also a great need for markers which might serve as ideal, prostate-specific targets for therapeutic methods such as antibody-directed therapy, immunotherapy, and gene therapy. Currently, there is no effective treatment for the 20-40% of patients who develop recurrent disease after surgery or radiation therapy or for those patients who have metastatic disease at the time of diagnosis. Although hormone ablation therapy can palliate these patients,